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September 11, 2015

Mr. Gary Miller
Remedial Project Manager
U.S. Environmental Protection Agency
Fountain Place 12th Floor, Suite 1200
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: SJRC / Gossett comments on draft Corps of Engineers report on the SJRWPS

Dear Mr. Miller:

The San Jacinto River Coalition (SJRC) appreciates work of the Engineering Research and Development Center of the U.S. Army Corps of Engineers in preparing the draft *Evaluation of the San Jacinto Waste Pits Feasibility Study Remediation Alternatives* report ("Corps Report" or "report"). This is not a routine part of the Superfund process, and its provides a significant amount of information that would not be available otherwise.

I am a volunteer with the SJRC. These comments are in addition to those being submitted by Jacquelyn Young, the SJRC's executive director. While I chair the environmental management program at the University of Houston – Clear Lake, these comments do not express the views or opinions of the university or any of its programs or offices.

Executive Summary

A fundamental problem with the Corps Report is its Executive Summary. For the most part, it is not consistent with the content of the Corps Report. It includes many statements that are (1) not supported by the content of the report or (2) blatantly inconsistent with the content in the main body of the report. The style and content of the Executive Summary are quite different from that of the report as a whole.

The most problematic statements express conclusory viewpoints consistent with supporting the 3N remedy preferred by the potentially responsible parties (PRPs). For example, the statements that "the cap is expected to be stable and permanent, requiring only maintenance and repair following unusual catastrophic events" and that "the armored cap is predicted to have long-term reliability from scour related processes" are directly rebutted in the body of the report, as discussed below.

The lack of accuracy and apparent bias in the Executive Summary substantially undermine the credibility of the report as a whole.

The entire Executive Summary should be re-written. Each statement within the final Executive Summary should be (1) supported by content contained in the report, and (2) not rebutted or qualified in other parts of the report, unless that information also is included in the Executive Summary. In doing this, the main body of the report should not be edited to make it consistent with a desired Executive Summary. All relevant data should be retained in the report.

Interrelationship with the Feasibility Study

It is impossible to evaluate the draft of the Corps of Engineers' *Evaluation of the San Jacinto Waste Pits Feasibility Study Remediation Alternatives* report (Corps Report) without also addressing the *Draft Final Interim Feasibility Study Report* for the San Jacinto Waste Pits Superfund Site (Feasibility Study) and related documents.

The Corps Report attempts to address the tasks it was assigned. However, it was working with the incomplete, insufficient and faulty information in the Remedial Investigation, Feasibility Study, and related documentation prepared by the PRPs and their contractors. The Corps also did not have the resources or time to complete some if its assigned tasks.

For any Superfund site, the Feasibility Study is a critical document, and is relied on in determining the steps to implement to remediate the site. Its "primary objective" is "to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected." 40 C.F.R. § 300.430(e)

The "goal of the remedy selection process is to select remedies that are protective of human health and the environment, that maintain protection over time, and to minimize untreated waste." 40 C.F.R. § 300.430(a)(i).

The Feasibility Study is the heart of the remedy-selection process. As such, it needs to objectively develop a range of alternatives. If the information and alternatives in the Feasibility Study are incorrect and incomplete, the whole process is compromised.

A major decision to be made at this site is whether the fundamental approach will be to primarily rely on the existing temporary cap to contain the waste in the river, or to implement a remedy that permanently removes most of the waste from the river and limits long-term potential for future dispersion and exposure.

The Feasibility Study appears to create a false choice between remedies that primarily implement the temporary cap as the long-term remedy, or remedies that remove the waste but arguably significantly increase the risk in the short and long due to releases into the river while implementing the remedy. This document, prepared by the potentially responsible parties (PRPs) and their consultants, seems designed to point toward the less-expensive alternatives that have the existing temporary cap as the primary control mechanism. It avoids evaluation of reasonable mitigation measures to minimize releases from the other alternatives. This results in removal alternatives appearing harmful, when as noted in the Corps Report, there are various feasible options available to drastically minimize any harm.

The Corps Report identifies various protective measures that were not considered by the PRPs, and also identifies potential solutions for some of the complications presented in the FS. Yet, the Corps Report and its tasks are focused to a good extent on this Feasibility Study, which (1) contains many deficiencies in both information and approach and (2) seems structured to support a pre-conceived conclusion. Ideally, the final Corps Report will decouple itself more from the Feasibility Study, and look at a broader range of alternatives.

The Feasibility Study also avoids any discussion of long-term monitoring under all listed alternatives. If any remedy short of nearly complete removal of the waste is selected, continued monitoring of the water, sediment, and biota near the side should be mandatory. The scope and cost of such regular monitoring into the 500-year future should be included in the evaluation of the various alternatives. Short-term monitoring (10 to 15 years) might be sufficient if the waste is fully removed (6N or more stringent options) and monitoring confirms the expected reduction of contamination in the nearby sediments and seafood.

The Corps Report fundamentally points is the need for (1) more information and (2) additional alternatives to be developed and better evaluated before a remedial decision is made for the site. The Corps Report is a good first step toward that direction.

The SJRC requests that additional development of information and alternatives should be done by independent third parties, and not be in the control of the PRPs or consultants they hire.

The Comprehensive Emergency Response and Liability Act (CERCLA) states that those responsible in any of several various ways for the hazardous substances at a Superfund site " shall be liable for . . .all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan" and "any other necessary costs of response incurred by any other person consistent with the national contingency plan." 42 U.S.C. 9607(a)(4) The EPA has the legal authority to require the PRPs to pay for such independent studies.

Uncertainty

A recurring theme of the Corps Report is uncertainty. Uncertainties with the approaches used by the PRPs in the RI/FS related to modeling (Task 4), the estimate of prop induced scour, cap undermining by toe erosion, erosion of the cap, changes in river flow dynamics and channel morphology (Task 7), and barge impacts (Task 8) are just of few of those addressed in the full report.

The Corps Report addresses this uncertainty directly in the following quote from page 42 of the Corps Report:

> It is the [Project Development Team's] professional judgment that the uncertainty inherent in any quantitative analysis used to estimate the long-term (500 years) reliability of the cap is very high.

The report states on the same page that the "estimate of the potential scour of the cap due to prop wash generated by ship traffic . . . probably has the smallest uncertainty associated with of the tasks" included

in Task 7, and "its estimated uncertainty is at least ± one order of magnitude. So, if the estimate . . . is 10 cm, then the range of uncertainty would be from 1 cm to 100 cm.

Other items in Task 7 that would have more than an order of magnitude of uncertainty include:

> Cap undermining caused by toe erosion.
>
> Erosion of the cap caused by movement of the armor rock across the surface of the cap during a large flood.
>
> Changes in river flow dynamics and channel morphology during a high flow event causes by a major food or hurricane.

Additionally a "hurricane was not simulated during this study" and neither was the scenario of "five 100-year floods occurring over five consecutive years." (Task 7 pp. 42-43) A major "wet" hurricane that first has a large storm surge move up the river, and then undergoes varying unpredictable and changing flow situations during the transition to a major flood event that reverses the flow, presents a very real scenario, and is almost certain to occur during the span of 500 years.

Just because you don't model the possible situations you don't want to face doesn't mean that they won't happen. Hurricanes are almost certain to occur in this area within the next 100 and 500 years. The failure to model these only adds to the uncertainly in predicting the ability of the cap to be reliable for 500+ years.

In Task 3, the Corps Report had many criticisms of the assumptions and data used in modeling performed by the PRPs and their consultants. Among many other things, with respect to the hydrodynamic model, "the poor agreement seen during the period July 3-4 indicated that the model did not accurately represent the combined tidal and riverine flows during this high flow event." (p. 14).

The Corps Report discusses limitations of the "decoupled hydrodynamic and sediment transport models" used by the PRPs and their consultants, and uses the term "uncertainty" five times in one paragraph. (Task 3, pp. 26-27. Read it!)

The barge accident modeling probably under-estimates the likelihood of a barge strike on the site. The barge activity in that area has increased dramatically in the 3 years I have been driving by the site on a fairly regular basis. There is no site-specific quantitative data used in the report. The .25 factor applied by the Corps likely underestimates the risk that exists now. (Task 8) Considering the population growth and increased usage expected in the future, the risk is likely grossly underestimated.

Even if the assumptions in the Corps Report prove correct, the site likely would experience at least one significant strike and 10 "low severity impact" strikes within the 500 years being evaluated. This should disqualify the use of the temporary cap as a permanent remedy under CERCLA. It simply won't be protective. Removal of the waste would eliminate this long-term risk.

Another area of uncertainty is the lifespan of the geo-textiles, geo-membranes and similar materials used in the temporary cap or any upgrades. My understanding is that such materials have been used for only

about 20 to 30 years, and they are known to degrade with exposure. This presents a significant degree of uncertainty when trying to make predictions over the next 500 years. Also, could they wear out? What are the potential impacts on the environmental and additional risks of exposure if the cap needs to be replaced at some point?

While the Corps Report indicates that it did not find instances where an "armored cap or armored confined disposal facility . . . completely breached or failed" (p. 66), many instances of damage were identified.

Missing is discussion of the actual problems that have been experienced with the existing temporary cap at the site. Why? This is a glaring omission.

To sum this up, the content of the Corps Report confirms that attempts to accurately determine the reliability of the cap for a period as long as 500 years are fundamentally unreliable. How could a different result have ended up in the Executive Summary?

Prior Experience

This Corps Report reminds me of a situation I was placed in decades ago as a young engineer. The seal around the edge of the floating roof in a large tank that stored a hydrocarbon product was not tight and allowed water to seep into the product during major rainfall events. A temporary solution that someone came up with was draping a large tarp from the top of the tank to divert water away from the problem areas with the seal. I was assigned the task of calculating the wind-speed that the tarp could handle before failing.

I objected. This was a dumb idea – though I don't think I used those exact words at that time. We had no clear data about the characteristics of the tarp's material. We had no useful information about the grommets used in the tarp and how they might fail. We had no reasonable way of calculating special wind dynamics that might occur because of the configurations of the tarp and the tank when faced with a broad variety of wind conditions. While I might find an equation to plug speculative numbers into, I would have no trust in the result. Too many variables would just be best-guess guesses. To do the testing needed to find the data needed to accurately address the question probably would have cost more than fixing the seal.

I was instructed that my job was to do the calculation requested. I did the best I could, and expressed many limitations, objections and concerns in the cover memo forwarding a calculation.

When the "Big Storm" came, the wind-blown tarp ended up breaking a pipe or part associated with the fire suppression system on the tank's floating roof. I was not directly involved with addressing the "Big Mess" that followed. I believe the floating roof sank, with contaminated product now on top of it. A large amount of expensive fire retardant foam was used to provide cover over the product while the tank was emptied. Repairs needed to be made to the tank, which I believe included a new floating roof and seal. I don't recall if the contaminated product needed to be disposed of or if it could be reprocessed. Either alternative would have been expensive. A geodesic fixed roof was added to the tank not long afterward.

I can't give a dollar value, but the costs to deal with the "Big Mess" clearly were much greater than the costs of initially fixing the seal would have been.

So why use this example here? It exemplifies several problems that also exist with the current report and Superfund site.

Having equations or models that you can use for a calculation doesn't mean they will result in accurate or useful information. This also is confirmed by examples within the Corps Report itself. See the discussion above in the "Uncertainties" heading.

As in my situation, the Corps was assigned specific tasks, with calculations or determinations requested. While proven models using on accurate and complete data can answer some questions, poor models or equations using incomplete or unreliable data become more of a "checklist" exercise rather than a real step toward answers or solutions. Again, additional analysis should be decoupled from the Feasibility Study.

Fixing the fundamental problem should be the objective. Half-fixes can create greater problems in the long term. Address the real issue. Costs and risks can increase overall when problems are half-fixed and denial reigns.

Other Concerns

Another glaring avoidance of reality is the failure to include subsistence fishers, both adults and children, now and in the future, when evaluating risk and deciding remediation levels. Multiple people at numerous SJRC meetings have talked about the many fishers they still see at or near the site, some of whom appear to be subsistence fishers. I personally have seen people fishing right under the fish advisory warning signs on or near the site. When briefly discussing this situation in a class session, members living in the area indicated that of course subsistence fisherman at the site. That's what some people there do.

During a recent Community Awareness Committee meeting, some participants discussed how they regularly see fishers near the warning signs along I-10 when they visit the area of the site. When fishers are told of the consumption advisory reflected in the sign they are standing near, apparently they often respond that they don't eat the fish. However, if they are intending to release the fish, why do then often have coolers or stringers of fish with them?

The recent report prepared by the Texas Department of State Health Services, *Assessment of the Occurrence of Cancer, East Harris County, Texas,* showed elevated levels of various cancers in some areas close to the site, and also in some other areas a little farther away but with demographics that are more likely to be consistent with subsistence fishers. Yes, this all is anecdotal information, but it comes from multiple sources and points to real concerns. Ignoring this issue doesn't make it go away. Assumptions that signage and access limitations are adequately addressing the problem, without more documentation, represent wishful thinking, not fact.

Another error involves the net sedimentation rate of 1.3 cm/yr ± 0.8 cm/yr. This is presented frequently in the report, and there is no discussion of this being anything other than a uniform sedimentation rate.

However, while this might represent a calculated average, with the varying flows, depths and slopes at the site, uniform sedimentation clearly would not occur. Even the Feasibility Study recognized this! A more important value would be the net sedimentation rate, considering scour during storms and high energy events, at the most vulnerable areas of the site and cap. There also is uncertainty about the accuracy of this calculation.

The SJRC believes that any settlement or Consent Decree with the PRPs should include reopener provisions in case the remedy initially selected fails. It may seem premature to raise this concern at his time, but we think it should be considered as part of the RI/FS and remedy selection process. The uncertainties involved with leaving the waste in place are greater than those of removing the waste. Who will bear the burden of addressing the problems when an initial remedy fails? If there is no reopener, who will have the resources to address the resulting problems? Who would the costs and harms fall on?

The SJRC requests that the EPA contract with an appropriate independent consultant to evaluate and fill in gaps in the Remedial Investigation and Feasibility Study and related reports and studies. We also request any independent evaluation develop the alternatives and mitigation practices identified by the Corps Report in more depth. We also would like long-term monitoring options to be addressed.

If anyone has questions or would like more detailed information, the best initial contact for me is via e-mail at lisa.gossett@sbcglobal.net.

Very truly yours,

Lisa B. Gossett, J.D.

cc: (via email)

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